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# **A survey of physiotherapists' current management and the promotion of physical activity, in people with rheumatoid arthritis**

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## **ABSTRACT**

**Purpose:** Establishing physiotherapists' management of people with rheumatoid arthritis, in addition to their promotion of physical activity, is important to ascertain if there are educational needs in this area.

**Materials and Methods:** Physiotherapists from three Irish Chartered Physiotherapy clinical interest groups (N=457) were invited to participate in a cross-sectional online questionnaire hosted on SurveyMonkey<sup>(R)TM</sup>.

**Results:** One hundred and sixty-eight (168/457; 37%) responded. Exercise prescription and education were the most frequent treatments, with 84% always/regularly providing same. Physical activity is a component of treatment with 52% always/regularly advising. In addition, 69% agree that physical activity is attainable, 68% safe and 67% an important goal. However, 62% never recommend the appropriate guidelines, while 14% define physical activity according to frequently used definitions. There was a statistically significant association between longer years qualified and more years working with people with RA, when using guidelines to guide physical activity and exercise prescription. Low-intensity exercises were prescribed by however, 67% never provide high-intensity.

**Conclusions:** Current practice is in line with guidelines in which, exercise therapy and education are considered as the mainstay. Promotion of physical activity is strong; however, two-thirds never recommend the appropriate guidelines, and only a minority defined physical activity correctly. The majority never prescribe high-intensity exercise. There is a need to develop education and training for physiotherapists in the promotion of physical activity in people with rheumatoid arthritis.

**Keywords:** exercise; inflammatory arthritis; health professional; guidelines; survey

## INTRODUCTION

Rheumatoid arthritis (RA) is an autoimmune disease, which causes chronic inflammation of the joints and injury to the organs of the body [1]. It is the most common type of inflammatory arthritis, and exhibits a fluctuating course, with pain, sleep disturbances and fatigue common symptoms, leading to reduced body functions and functional limitations such as physical activity [2, 3, 4].

Physiotherapy is frequently used as an intervention for people with RA and in recent years research on its effectiveness has grown [5, 6, 7]. This research and its evidence has been translated into practice guidelines and recommendations for physiotherapists [8, 9, 10]. Approximately 70% of people with RA have contact with a physiotherapist at some point during the course of their condition [5, 11].

According to the American College of Sports Medicine, the promotion of physical activity in adults should emphasize moderate-intensity aerobic activity, in addition to muscle-strengthening activity [12]. Physical activity increases health related quality of life in people with RA and decreases the risk of various conditions such as cardiovascular disease and osteoporosis [13, 14]. It has been found that the total amount of time spent on physical activity is lower in people with RA [15]. Pharmacologic interventions have improved the management of RA however, physical activity remains an important part of overall treatment [9, 16, 17]. Structured exercise confers benefits at low risk in a majority of people with RA [18] however, exercise is only a subset of physical activity. Authors and health professionals sometimes use physical activity and exercise interchangeably however, they are quite different considerations. Physical activity is defined as *'any bodily movement produced by skeletal muscles that results in*

*energy expenditure*’ while exercise is *‘a subset of physical activity, which is planned, structured and repetitive’* with the view to improving or maintaining physical fitness [19]. It is important therefore, that physical activity is fully researched and studied, and not just a component of it.

Many people with RA do not participate in the recommended levels of and exercise due to physical and psychological factors [13, 20]. Patient education has an important role to play, therefore, physiotherapists should be educated and encouraged in promoting physical activity in people with RA, as it will help improve functional ability, reduce pain, in addition to helping countermeasure rheumatoid cachexia [21].

Studies on physiotherapy management have been collected, however some have been gathered directly from people with RA [22, 23, 24]. In addition these studies have been from a mixed arthritis population or from physiotherapists in relation to their professional needs [25, 26], and in relation to the term ‘arthritis’ rather than specifically in rheumatology. Based on the relevant practice guidelines and recommendations in managing people with RA and given the scarcity of information regarding the specific treatment modalities of physiotherapists, a survey of current practice is long overdue in Ireland. There is also very little research available regarding the views and perceptions of physiotherapists in the practice of promoting physical activity and exercise therapy in people with RA. Indeed, exercise therapy is an important core skill of physiotherapists, therefore appraising its use with reference to Frequency, Intensity, Time and Type (FITT principle), will provide a valuable insight into the current situation.

The information gathered from the appraisal of this current practice may help in identifying areas where current practice is not in line with guidelines and recommendations. This may be of benefit in influencing the provision of educational

and research opportunities in this area, which will ultimately help in improving overall patient care.

## **METHODOLOGY**

### ***Study design/Participants***

The STROBE reporting guidelines for observational studies were used to guide the reporting of this study [27]. A cross-sectional questionnaire design was chosen as this allowed for the collection of data from a wider range of participants. Physiotherapists from three Irish Society of Chartered Physiotherapists clinical interest groups were invited to participate: -

- Chartered Physiotherapists in Rheumatology (CPR). N=37
- Chartered Physiotherapists in Private Practice (CPP). N=171
- Chartered Physiotherapists in Musculoskeletal Therapy (CPMT). N=249

When answering, participants had to choose which group they were specifically from. These groups were chosen, as membership either indicated a direct interest/involvement in Rheumatology (CPR) or were more likely to be involved in the management of RA (CPP; CMPT). These groups also provided a random sample of those working in public and private clinical settings, helping to improve the generalisability of the study.

Ethical approval was granted by the University's Faculty of Education and Health Sciences Research Ethics Committee. Informed consent was implied if the participant continued with the questionnaire, having initially read the information sheet. All procedures performed in studies involving human participants were in accordance with

the ethical standards of the University and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

### *Questionnaire*

A review of the literature revealed a number of previous studies examining physiotherapy practice and the promotion of physical therapy, in people with rheumatoid arthritis however, we felt these were not fully appropriate to an Irish context because they were in relation to a mixed arthritis population [23]; directly from people with rheumatoid arthritis [22]; or gathering information from physiotherapists in connection with their views on certification and/or professional needs [24, 26].

However, in conjunction with the above and other studies conducted using a similar online questionnaire format, although not necessarily within RA [28, 29], a questionnaire was developed using the current available literature (Supplementary Material).

This questionnaire consisted of 20 questions, 15 of which were closed and 5 open, divided into several sections: (1) Demographics and (2) Current Practice (3) Physical Activity. Conscious of having a majority of questions being closed and possibly creating false opinions, a number of discussions were organised with physiotherapists from all 3 groups in order to ascertain face validity of the questionnaire and, to ensure a sufficient range of alternative answers were provided [30]. The importance of these discussions was to ensure the constructs surveyed within the questionnaire reflected the aims of the study. The final questionnaire was piloted with 2 additional physiotherapists and 2 inflammatory arthritis experts to optimise content validity. This was to ensure questions were readable, relevant and representative of the study's aims, and in addition

to minimise the risk of missing data. Several syntax changes were made to the original questionnaire in order to make it easier for participants to read and answer relevant questions.

For capturing physiotherapists' current practice, a four-point Likert scale was used as it is useful when gauging frequency [31]. However, a five-point Likert scale was used for their opinions, which allows measurement of the intensity, extremity and direction of responses [32].

To determine participant's physical activity levels and to assess if they met the relevant guidelines, a final question based on the Short Questionnaire to Assess Health Enhancing Physical Activity (SQUASH) was asked [33]. This measure contains 11 questions on physical activity related to commuting activities, leisure time and sports activities, household activities, and activity at work and school. It is a reliable and valid questionnaire, and is a useful tool for the evaluation of health enhancing physical activity [34]. Reproducibility, of the separate questions, assessed with Spearman's correlation coefficient, have a mean value of 0.75 (range: 0.44 - 0.96) [33]. The SQUASH has been used previously in a study examining rheumatology health professionals involvement in physical activity promotion [29]. In this study the total minutes of activity per week was used as it incorporates frequency and duration of all included activities.

### ***Data Collection***

The questionnaire was administered through SurveyMonkey<sup>(R)TM</sup>. The advantages of distributing a survey online include a broad geographic distribution, confidentiality and

convenience to participants [35]. Other advantages in using web-based questionnaires include the ease of data collection and analysis [36].

The Chairperson of each clinical interest group acted as gatekeeper and distributed the questionnaire via email to their members. This email included information regarding the survey and a hyperlink to the SurveyMonkey<sup>(R)TM</sup> website, allowing members to access the questionnaire online. An informed consent sheet was not provided as respondents were informed that by choosing to respond to the survey, their consent was implied. As advocated in the literature, to obtain the highest possible response rate three reminders were sent [37].

### ***Data Analysis***

Basic descriptive statistics for demographic questions (Questions 1-7) were generated by SurveyMonkey<sup>(R)TM</sup> and transported into Microsoft Office Excel (2013) for further analysis. Closed questions using a Likert Scale (Questions 11-14 and 17-20) were analysed using SurveyMonkey's<sup>(R)TM</sup> inbuilt statistical system. Data were missing from some questions therefore; each question has an absolute and relative response included (e.g. 90%; 151/168).

Data obtained from open-ended questions (Questions 6-7 and 15-17) were analysed using conventional content analysis, with the advantage being that information is gathered from respondents without enforcing pre-established categories [38]. These responses were short and often consisted of a word or line, therefore Microsoft Office Excel (2013) was used to store and organise the data rather than more specialist software such as NVivo. Analysis was carried out as described by Hsieh and Shannon



six steps [39]. This consisted of repeatedly studying the responses generated in order to become familiar with their content, data coding which was colour coded and ultimately the identification of categories, which were then given labels. Only category labels in conjunction with their percentages are reported.

Tests for normality were conducted and non-parametric tests were utilised throughout. Specifically, when investigating variables surrounding differences in using the American College of Sports Medicine guidelines to guide physical activity, years qualified and years' experience working with people with RA, Mann-Whitney U and Chi-square/Fisher's Exact (FET) tests were used depending on the nature of the data i.e. continuous or categorical. In addition, differences in providing high or low-intensity exercises to established RA or to those with an exacerbation, and years qualified and years' experience working with people with RA were also investigated. Level of significance was set at  $p < 0.05$ .

## **RESULTS**

One hundred and sixty-eight (168/457) physiotherapists responded, resulting in a response rate of 37%. Those members who were involved in a specific rheumatology group (CPR) recorded a response rate of 73% (27/37). Socio-demographic and professional profiles are provided in Table 1.

### ***Treatment modalities used***

Exercise prescription (116/139) combined with self-management techniques (118/140) were always/regularly provided by 84%. Physical Activity is an important component

of treatment with the majority of respondents (52%, 74/141) always/regularly using it as an intervention, while 46% (65/141) stated sometimes employing it. Electrotherapeutic modalities were not a key feature of practice with 57% (79/139) never using Ultrasound or 36% Transcutaneous Electrical Nerve Stimulation (TENS) (48/135). The majority of respondents 64% (88/137) used Heat Therapy sometimes while 66% used Massage (93/139) and Manual Therapy (94/138) either always/regularly/sometimes. Full details are outlined in Table 2.

### ***Physical Activity***

When defining physical activity, a third of respondents (33%, 47/141) replied that it meant '*Moving*', with 18% (25/141) stating '*Moving Daily*'. Fourteen percent (14%; 20/141) of respondents defined physical activity according to '*Bodily Movement requiring energy*' [19]. See Figure 1 for additional information.

A majority of physiotherapists agreed that physical activity is attainable (69%, 97/141), safe (68%, 95/141) and is an important goal (67%, 94/141), for people with RA (see Table 3).

Ninety three percent (93%) of respondents advise those with a recent diagnosis (130/140) and those with established RA (139/140) to be physically active, while 56% (79/140) advise those who are having an acute onset of RA. Sixty two percent (62%; 86/138) never recommend the American College of Sports Medicine guidelines when advising on physical activity [12] (see Figure 2).

A chi-square test of independence was performed to examine differences in using the American College of Sports Medicine guidelines to guide physical activity and exercise

prescription and years qualified as a physiotherapist (95% CI: 14.29, 16.93), and years' experience working with people with RA (95% CI: 9.33, 11.69). There was a statistically significant difference in using these guidelines across longer years qualified  $\chi^2_{(1)(N=140)} = 9.41, p = 0.027$  and longer years' experience,  $\chi^2_{(1)(N=138)} = 8.56, p = 0.018$ .

When using the SQUASH, the total minutes of activity per week, which incorporates frequency and duration of all included activities was used and results show respondents spent a low 835 minutes (SD\_359) on physical activity, over an average week. There was a statistically significant association between those who were more physically active and promoting physical activity with their patients  $\chi^2_{(1)(N=138)} = 6.58, p = 0.004$ .

### ***Exercise***

When defining Exercise, the majority of respondents (77%, 108/140) replied that it meant '*Cardiovascular/Increasing HRT*', with 12% (17/140) stating '*Movement with purpose*'. 7% (10/140) of respondents defined Exercise as '*Planned & structured activity*'. See Figure 3 for additional information.

Ninety seven percent (97%) provide a programme to those recently diagnosed with RA and those with established RA, while 46% do so during an exacerbation. Ninety nine percent (99%) provide low-intensity exercises while 67% never provide high-intensity (see Figure 4).

Through an open question, respondents commented that overall the Frequency, Intensity, Time & Type (FITT) exercise principle was '*patient dependent*', '*based on progression of disease*' and '*within their capability*'.

### ***FITT – established RA***

*Frequency* - Content analysis of the responses identified, for those with established RA, nearly half recommend daily exercise (46%, 61/134), with 22% (29/134) recommending it five times per week. 7% of those surveyed (10/134) recommend 3-5 times per week.

*Intensity* - Regarding the intensity level just over half of all those surveyed (52%, 71/136) recommend a moderate level, 27% (37/136) a low to moderate level and 14% (19/136) a low level of intensity.

*Time* - With reference to time, 39% (51/131) indicate an exercise time of 30 minutes while 24% (32/131) state > 45 minutes and 23% (30/131) 30-45 minutes as a suggestion for a programme.

*Type* - When discussing the type of exercise 52% (70/135) recommend Aerobic/Resistance, 20% (27/135) Aerobic and 10% (13/135) recommend Aerobic/Resistance/Stretch (13/137) (Supplementary Table S1).

### ***FITT – recent diagnosis of RA***

*Frequency* – Content analysis of the responses revealed, for those recently diagnosed with RA, 31% (42/135) recommend daily exercise, with 24% (32/135) recommending three times per week. 12% of those surveyed (16/135) recommend 2-3 times per week.

*Intensity* - Regarding the intensity level 47% (65/137) recommend a low level, 38% (51/137) a low to moderate level and 14% (19/137) a moderate level of intensity.

*Time* - With reference to time 34% (47/137) indicate an exercise time of < 20 minutes while 31% (42/137) state 30 minutes and 21% (29/137) 20-30 minutes as a suggestion for a programme.

*Type* - When discussing the type of exercise 31% of respondents (42/137) indicate both Aerobic/Resistance and Aerobic as examples and 9% recommend Aerobic/Resistance/Stretch (13/137) (Supplementary Table S2).

### ***Confidence of respondents***

A mean of 6.45/10 (+/-1.70) was reported by respondents regarding their confidence in promoting physical activity to people with RA (see Table 4). Ninety six percent (96%; 135/141) indicated that they would be interested in further education in the promotion of physical activity among people with RA with 75% (106/141) favouring a clinical interest group study day as a means to receiving this information.

## **DISCUSSION**

Regarding the current practice of physiotherapists, exercise prescription and education on self-management techniques were the most frequent treatments with the large majority always/regularly providing same. This is in line with RA guidelines in which, exercise therapy and education are considered as the mainstay in the physiotherapy management of people with RA [8, 9, 10]. Electrotherapeutic modalities were not a key feature of practice with only a minority favouring Ultrasound, Transcutaneous Electrical Nerve Stimulation (TENS) and Massage however, it is difficult to state if this practice is in line with the available evidence, as current guidelines are inconclusive [7, 9].

Results show very few physiotherapists can define physical activity according to frequently used definitions. This is not surprising as authors and other health professionals sometimes use physical activity and exercise interchangeably however, as previously stated they are quite different considerations.

Physiotherapists have a positive attitude towards physical activity for people with RA, which is in line with a study by Munneke et al [40], and agree that it is attainable, safe and an important goal. Available research with regards to rheumatologists and clinical nurse specialists shows some interesting comparisons. Iversen et al (1999) found that 42% of American rheumatologists had more negative attitude towards activity in people with RA and believed range of motion (80%) and strengthening exercises (58%) to be useful [41]. Hurkmans et al (2011) reported 94% of Dutch rheumatologists and 100% of CNS's believe regular physical activity to be important for people with RA [29]. It is acknowledged that comparison among these studies can be difficult due to differing survey methods, time between results and locations but it is interesting to note that in 1999 rheumatologists found activity to be the least useful in the management of RA, while in 2011 attitudes appear to have changed [29].

It is disappointing to note that only a minority of physiotherapists recommend the public health guidelines when advising on physical activity, even though they are communicated to the general population by various organisations and mass media [12, 42], but perhaps not unusual as other clinical groups have also been identified as lacking familiarity with national activity guidelines [43, 44, 45]. However, it is interesting that a statistically significant difference was found between longer years qualified and more years working with people with RA and using the American College of Sports Medicine guidelines. Respondents average SQUASH physical activity levels were a low 835 minutes per week, compared to other surveys [29, 46] however, there was a statistically

significance with those reporting above average activity levels and promoting physical activity with their patients.

Exercise has been shown to be particularly beneficial to people with RA as they are often physically inactive [47, 48]. Physiotherapists therefore have an important role to play in this area and indeed exercise prescription is an important core skill [45, 49], therefore it is reassuring to know that a great majority of those surveyed always/regularly provide an exercise programme to people with RA. However, results show that only a small minority can define exercise according to frequently used definitions [19].

Although physiotherapists have in general a positive attitude to providing an exercise programme to those recently diagnosed and those with established RA, it is only with the prescription of low-intensity exercises. It is also interesting to note that 68% of respondents reported that physical activity was safe for people with RA. Safety of different types of exercise have been questioned by health professionals previously [50] therefore, consistent promotion of exercise throughout a multi-disciplinary team, is important to ensure that a clear message regarding rest, joint protection and exercise is provided to patients to avoid the provision of confusing messages [51]. From our study nearly, all prescribe low-intensity however, two-thirds never provide high-intensity exercises. In recent years however, a number of studies have shown that even for those people with RA who have a high disease activity, high-intensity activity is both effective and safe [18, 52]. This disparity between theory and practice indicates Irish physiotherapists' knowledge needs improvement, in addition their understanding of the definition of physical activity and exercise needs to be addressed.

Poor cardiovascular health is the main cause of death in people with RA as they tend to have poor cardio-respiratory fitness. Therefore, the inclusion of aerobic exercise as part

of treatment is essential. The addition of resistance exercises helps to mitigate rheumatoid cachexia and other musculoskeletal and joint health issues. Both types of exercises may need to be required for maintaining bone mineral density [18]. For those with established or recently diagnosed RA, the majority of respondents recommend daily exercise or up to five times a week, with a low to moderate intensity level for up to 30 or more minutes, with Aerobic exercise combined with Resistance training being the type of choice. Parts of these recommendations are in line with the American College of Sports Medicine guidelines who recommend moderate intensity aerobic exercise for a minimum of 30 minutes, 3 to 5 times per week and 2 to 3 days per week for resistance exercise [12]. However, these guidelines also recommend stretching to improve flexibility and balance work due to problems with lower-extremity arthritis and these were only recommended by a small minority of respondents in this study.

A confident, skilled workforce is essential in implementing relevant recommendations and guidelines and in optimising the delivery of services to people with RA. In this survey respondents reported a moderate level of confidence with regards to the promotion of physical activity to people with RA. This is in line with a 2011 survey among Dutch physiotherapists [29] who reported a mean of 6.8 (+/-1.0) regarding their perceived competency in promoting physical activity in people with RA. However, a recent survey of physiotherapists in Australia showed a lack of confidence in recognising the early signs of RA, knowledge of the disease course and in evidence-based physical activity interventions in managing a person with RA [53].

Regarding the educational needs of physiotherapists, continuing professional development may be effective in enhancing knowledge, skills and confidence when delivered in a purposeful manner, so that the right information is delivered. In this survey an overwhelming majority of respondents indicated that they would be interested



in further education in the promotion of physical activity. Respondents in the Australian study above also indicated a clear need for continuing professional development with over 70% of respondents stating a need for same [53].

It is encouraging to see that physiotherapists are interested in and want to further their education in RA however, to ensure that professional resources are delivered in the right way, it is also important to understand future participants preferred approach to delivery. In this survey a clear majority of respondents surveyed favoured a clinical interest group study day as a means to receiving information.

### **Limitations**

There are a number of limitations that need to be considered when interpreting the results of this survey.

A cross-sectional questionnaire was chosen thus, conclusions on causal relationships cannot be drawn. A follow up over time could have helped in order to allow for firmer conclusions about causality.

The questionnaire was based on self-report from three specific clinical interest groups and may therefore have attracted more socially desired answers, in particular those from the rheumatology group. We did ensure the data collection was anonymous however, self-reports are never completely free from bias [54]. However, as all respondents were from these groups are more than likely to be a particularly 'well-informed' group of physiotherapists', which adds to our suggestion regarding the need for continuing professional development in this area as these are the opinions of the 'well-informed',

therefore, others not involved in such groups out of choice are less likely to be as aware of current research/standards/etc.

An acceptable response rate for surveys has been debated in the literature [55]. It is possible that physiotherapists who responded to the survey were different from those that did not, which may have resulted in selection bias. It is not known whether all email addresses which the gatekeepers sent the survey to were valid and active and participants may not have had internet access or there may have been survey fatigue [56]. Therefore, all of these issues may have contributed to our response rate, in particular to the final results from the individual clinical interest groups.

Despite these limitations, this study includes a representative sample of physiotherapists from both public and private institutions, working with people with rheumatoid arthritis. It provides valuable insight into how they manage this population and their opinions on promoting physical activity, in addition to contributing to the broader rehabilitation literature regarding people with rheumatoid arthritis.

### **Recommendations for future research**

Further research is necessary in the development of education and training for physiotherapists in the promotion of PA and exercise in people with RA and how to impart better advice regarding the effects/benefits of exercise.

Additionally, from a more holistic point of view, further research is required in ascertaining the knowledge and practice of other health professionals, with regards to their management of people with RA.

## **CONCLUSION**

This is the first study to examine the current practice of Irish physiotherapists in the management of RA and their promotion of PA in this population. Based on the results current practice of most physiotherapists is in line with RA guidelines in which, exercise therapy and education are considered as the mainstay in the physiotherapy management of people with RA, with electrotherapeutic modalities not being a key feature.

Promotion of PA to people with RA is strong however, two-thirds never recommend the ACSM guidelines and only a minority defined PA and exercise according to frequently used definitions. The majority prescribe light-intensity exercise only even though research shows high-intensity is both effective and safe. While only parts of the FITT principle recommended by respondents are in line with the ACSM guidelines.

Respondents indicate that their confidence is moderate in the promotion of PA to people with RA, with an overwhelming majority interested in further education. There is a need to develop education and training for physiotherapists to deal with the disparity between theory and practice in the promotion of PA and exercise in people with RA.

### **Conflict of Interest**

All authors declare no conflicts of interest

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## **FIGURE LEGEND**

Figure 1: Results of an open question concerning participant's definition of physical activity

Figure 2: Results of respondents advice in relation to advising physical activity to those recently diagnosed; those with established; those having an acute onset and the relevant guidelines to people with rheumatoid arthritis

Figure 3: Results of an open question concerning participant's definition of exercise

Figure 4: Results of respondents advice in relation to providing an exercise programme to those recently diagnosed; those with established; those having an exacerbation and the intensity of exercise to people with rheumatoid arthritis

**Table 1: Demographic and professional profile of respondents to online questionnaire**

<b>Demographic Profile</b>	<b>% (N)</b>
Total No. of respondents	37% (168)
- Chartered physiotherapists in Rheumatology (N=37)	73% (27/37)
- Chartered physiotherapists in private practice (N=171)	23% (39/171)
- Chartered physiotherapists in musculoskeletal therapy (N=249)	41% (102/249)
Female	84% (141/168)
<b>Age</b>	<b>% (N)</b>
18 to 24	4.8% (8)
25 to 34	34.5% (58)
35 to 44	36.9% (62)
45 to 54	20.2% (34)
55 to 64	3.6% (6)
<b>Place of Work (more than one answer possible)</b>	<b>% (N)</b>
Hospital - Part/time	18.5% (31)
Hospital - Full/time	19% (32)
Private Practice - Part/time	28.6% (48)
Private Practice - Full/time	48.2% (81)
Other e.g. Pilates, teams, university,	9.5% (16)
<b>Level of Qualification</b>	<b>% (N)</b>
Undergraduate	54% (90)
Post graduate certificate	6% (10)
Post graduate diploma	11% (19)
Masters	28% (47)
PhD	1% (2)
<b>% of rheumatoid arthritis patients treated monthly</b>	<b>% (N)</b>
<5%	36% (60)
6-10%	51% (86)
11-25%	11% (19)
26-50%	1.5% (2)
51-75%	0% (0)
76-100%	0.5% (1)



**Table 2: Treatment modalities used by respondents with people with rheumatoid arthritis**

	<b>Respondents (N)</b>	<b>Always % (N)</b>	<b>Regularly % (N)</b>	<b>Sometimes % (N)</b>	<b>Never % (N)</b>
Physical Activity advice	141	33% (47)	19% (27)	46% (65)	1% (2)
Provide an Exercise Programme	139	31% (43)	53% (73)	16% (22)	1% (1)
Education on Self-Management	140	33% (46)	51% (72)	15% (21)	1% (1)
Ultrasound	139	0% (0)	4% (6)	39% (54)	57% (79)
Transcutaneous nerve stimulation (TENS)	135	1% (1)	4% (5)	60% (81)	36% (48)
Heat Therapy	137	2% (3)	15% (21)	64% (88)	18% (25)
Massage	139	4% (6)	17% (24)	45% (63)	33% (46)
Manual Therapy (mobilisations)	138	4% (6)	10% (14)	52% (72)	33% (46)
Other e.g. Dryneedling, Cognitive behavioural therapy, Strapping	24	13% (3)	29% (7)	17% (4)	41% (10)

**Table 3: Views of physiotherapists regarding physical activity in people with rheumatoid arthritis**

	<b>Respondents (N)</b>	<b>Strongly disagree % (N)</b>	<b>Disagree % (N)</b>	<b>Neutral % (N)</b>	<b>Agree % (N)</b>	<b>Strongly agree % (N)</b>
Regular physical activity is attainable for people with rheumatoid arthritis	141	2% (3)	2% (3)	27% (38)	47% (66)	22% (31)
Regular physical activity is safe for people with rheumatoid arthritis	141	2% (3)	1% (2)	29% (41)	48% (67)	20% (28)
Regular physical activity should be an important goal for people with rheumatoid arthritis	141	2% (3)	4% (5)	27% (38)	35% (50)	32% (45)

**Table 4: Confidence of respondents in promoting physical activity to people with rheumatoid arthritis**

	<b>Respondents (N)</b>	<b>NRS (0-10) Mean (SD)</b>
I am confident in advising physical activity to people with rheumatoid arthritis	141	6.87 (1.74)
I am confident in providing understandable information on physical activity to people with rheumatoid arthritis	140	6.88 (1.72)
I am confident in encouraging people with rheumatoid arthritis to set achievable physical activity health goals	141	6.82 (1.61)
I am confident in educating people with rheumatoid arthritis in setting those physical activity health goals	140	6.62 (1.71)
I am confident in educating people with rheumatoid arthritis in how to monitor their progress towards their health goals	140	6.34 (1.66)
I am confident in preventing people with rheumatoid arthritis in over criticising themselves when they encounter difficulties in reaching their health goals	141	6.21 (1.68)
I am confident in educating people with rheumatoid arthritis on how not to give up on their health goals if they experience a problem/setback	140	6.14 (1.78)
I am confident in educating people with rheumatoid arthritis on how to control negative emotions/stress that could prevent them from reaching their health goals	141	5.71 (1.72)
<b>Total score</b>		<b>6.45 (1.70)</b>